



US005589855A

**United States Patent** [19][11] **Patent Number:** **5,589,855****Blumstein et al.**[45] **Date of Patent:** **Dec. 31, 1996**[54] **VISUALLY IMPAIRED CUSTOMER  
ACTIVATED TERMINAL METHOD AND  
SYSTEM**[56] **References Cited****U.S. PATENT DOCUMENTS**

5,185,515 2/1993 Nishibe ..... 235/379

**FOREIGN PATENT DOCUMENTS**

0186359 8/1987 Japan .

2145257 3/1985 United Kingdom ..... 340/825.19

*Primary Examiner*—Kee M. Tung*Assistant Examiner*—Matthew Luu*Attorney, Agent, or Firm*—Blakely Sokoloff Taylor & Zafman

[75] **Inventors:** Paul Blumstein, Palos Verdes; Randy Cole, Los Angeles; James Cook, Manhattan Beach; Ashwin Doshi, Cerritos; Michael Grandcolas, Santa Monica; Stephen Gryte, Los Angeles; Frank McCallick, Encino; Marvin Moskowitz, West Hills; Howard Schechtman, Agoura Hills; Michael Sears, Torrance; Steve Shulman, West Hollywood, all of Calif.; Walter Greenberg, Chicago, Ill.; Patricia Millo, Port Washington, N.Y.; Paul Sidikman, Livingston, N.J.; Alex J. Virnig, Northridge; Paul Witman, Simi Valley, both of Calif.; Valerie Fenster, New York, N.Y.

[73] **Assignee:** Transaction Technology, Inc., Santa Monica, Calif.

[21] **Appl. No.:** 930,319[22] **Filed:** Aug. 14, 1992[51] **Int. Cl.<sup>6</sup>** ..... G09G 5/00[52] **U.S. Cl.** ..... 345/173; 235/379; 340/825.19

[58] **Field of Search** ..... 345/156, 170,  
345/173; 340/825.19, 825.33; 341/21; 235/379,  
375; 902/4, 5, 20; 221/2

[57] **ABSTRACT**

A method and system for entering numerical information in a manner that can be easily used by visually impaired individuals are disclosed. Using a touch screen display, for each digit of a multidigit number a first location on the screen is touched a number of times equal to the digit followed by touching a second location. Once all the digits have been entered, a third location is touched. This method allows for dividing the touch screen display into a small number of large area touch active regions, such as quadrants, thus reducing the accuracy required to enter a value since the large area quadrants are easily referenced to the screen boundaries. Further, audible cues are used to prompt the user as well as provide feedback.

**23 Claims, 7 Drawing Sheets**